


<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		Docket Number CA1122	
Mail Stop AF Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	Filed	
	09/817,591	March 26, 2001	
	First Named Inventor		
	Yihong GONG		
	Art Unit	Examiner	
	2176	Quoc A. TRAN	
<p style="text-align: center;">WASHINGTON DC OFFICE</p> <p style="text-align: center;"><b>23373</b></p> <p style="text-align: center;">CUSTOMER NUMBER</p>			
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal</p> <p>The review is requested for the reasons stated on the attached sheet(s).</p> <p>Note: No more than five (5) pages may be provided.</p> <p><input checked="" type="checkbox"/> I am an attorney or agent of record.</p> <p>Registration number <u>47,947</u></p>			
		 Signature	
		<u>Fariba Sirjani</u> Typed or printed name	
		<u>(650) 625-8100</u> Telephone number	
		<u>February 3, 2009</u> Date	

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: CA1122

Yihong GONG, et al.

Appln. No.: 09/817,591

Group Art Unit: 2176

Confirmation No.: 7751

Examiner: Quoc A. TRAN

Filed: March 26, 2001

For: TEXT SUMMARIZATION USING RELEVANCE MEASURES AND LATENT  
SEMANTIC ANALYSIS

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**MAIL STOP AF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated September 4, 2008, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

**At the outset, Applicants emphasize: The "extraction" in Hwang is nether the same nor does it teach or suggest "selecting a sentence for inclusion in ... summary ... [and] deleting said selected sentence from said document" of claim 1 or similar elements of other independent claims.** (See, e.g., Advisory Action of 12-18-08, p. 2, 4<sup>th</sup> paragraph, line 4.)

**Claim Rejections – 35 U.S.C. 103**

Claims 1-32 are pending in the Application. Claims 1, 9, 13, 21, 26, and 29 are independent. The claims are rejected under 35 U.S.C. 103(a) as allegedly unpatentable: claims 1-4, 9-16, 21-24, and 26-31 over Hwang (U.S. Patent Application Publication No. 2002/0078090 A1) in view of Foltz (U.S. Patent No. 6,356,864); claims 5, 7, 17, 19, 25, and 32 over Hwang, in view of Foltz, further in view of Boguraev (U.S. Patent No. 6,865,572); claims 6, 8, 18, and 20 over Hwang, in view of Foltz, further in view of Boguraev, and further in view of Cohen (William W. Cohen, "Data Integration Using Similarity Joins and a Word-Based Information

Representation Language,” by AT&T Lab-Research Shannon Laboratory, Published by ACM, Vol. 18; No. 3, July 200, pages 288-321.”) Applicants respectfully traverse.

#### Claim 1

Claim 1 recites “A method of creating a generic text summary of a document ... comprising ... computing a score for each ... sentence ... in accordance with relevance to said ... document ... selecting a sentence for inclusion in ... summary ... wherein the selected sentence has ... high degree of relevance ... to ... document ... deleting said selected sentence from said document and eliminating terms in said selected sentence from said document; and generating the generic text summary based on the selected sentence.” (Emphasis added.)

**“Deleting said selected sentence from said document” is not taught or suggested.**

Paragraphs [0040] and [0041] of Hwang are cited for the allegedly teaching this element. The Examiner is interpreting the “extraction” of sentences in Hwang as the “deleting” of claim 1. However, Hwang extracts the sentences to form a summary of the text but does not delete the sentences, that are extracted, from the document.

First, there is no disclosure in Hwang that the “extracted” sentences are deleted.

Second, there is no reason or logic for deletion of the selected sentences in Hwang. Deletion of a selected sentence changes the document before a subsequent selection step. Hwang is determining the relevance of each sentence to a “user profile indicative of user’s interests” which is a factor unrelated to the document. (Hwang, abstract.) The relevance in Hwang is not determined with respect to the document. Hwang is not “computing a score for each ... sentence ... in accordance with relevance to said ... document [the same document containing the sentence]” of claim 1. Therefore, in Hwang, the relevance score of all of the sentences to the user profile is determined all at the same time and the relevant sentences are all extracted at the same time to generate the summary. (See, Hwang, paragraphs [0010], [0036] and [0040], step 308 of Figure 3.) There is no reason for deleting a sentence from the document, which causes a modification of the document, when the relevance of each sentence is being gauged with respect to factors external to the document as is done in Hwang.

Third, “extracting” and “deleting” are not the same. If “extraction” were followed by “discarding the extracted item,” and were intended to mean “exclusion,” then maybe “extraction” could be “deletion.” Here, the Examiner is using “extracting” to indicate “inclusion” in the text summary (see page 3 of the Office action: “Hwang discloses this limitation in that selecting sentences for inclusion in the document text summary based upon the ranking”). Therefore,

“extracting” cannot mean exclusion at the same time that is used to mean “inclusion” and is not synonymous with “deletion.” The Examiner is interpreting the “extraction” of Hwang to have several contradictory meanings at the same time.

The sentences that are “deleted” in claim 1 happen to be the sentences that were “selected” for inclusion in the summary. Yet, “deleting” of claim 1 is an element in addition to elements of “selecting a sentence for inclusion in ... summary” and “generating the generic text summary based on the selected sentence.” As explained below, claim 1 gets rid of the sentences that have already been used in the summary so it can calculate the next relevance score unaffected by the sentences that have already been used.

**“Eliminating terms in said selected sentence” of claim 1 is not taught or suggested.**

The Examiner is citing to “context information e.g., which paragraph each sentence is from” of Hwang for teaching “eliminating terms in said selected sentence” of claim 1. Again “extracting” of Hwang that is done for inclusion of the sentence in the summary cannot be “eliminating” of claim 1. Further, the context information of Hwang cannot be “terms in said selected sentence” of claim 1 because it is very unusual that sentences include information such as their paragraph number as terms in the sentence.

**The flaw in the logic is more pronounced in the rejection of dependent claim 2.**

Dependent claim 2 adds “recreating said weighted document term-frequency vector in accordance with said deleting and said eliminating; and selectively repeating said computing, said selecting, said deleting, said eliminating, and said recreating.” (Emphasis added.)

The Examiner cites to the same paragraphs [0040] and [0041] of Hwang for teaching the elements of this claim as well. Then, the Examiner adds paragraph [0047] of Hwang that pertains to “Processing new documents against pre-selected, client specific concepts defined by the client, or inferred by the system, and computing the relevancy score for each document” to support its rejection of claim 2. As such, claim 2 is interpreted as being applied to a new document. This is incorrect. Claim 2 sets forth “recreating said weighted document term-frequency vector.” This element refers back to “creating a weighted document term-frequency vector for said document” of claim 1 and pertains to the same document that was processed in claim 1. Hwang has no disclosure of repeating the process on the same document; in Hwang it is one document, one time and then onward to the next document. As such, Hwang cannot teach claim 2.

If the Examiner had cited specific steps of Hwang for teaching “computing ... selecting ... deleting ... eliminating, and ... recreating” of claim 2, then, it would become more clear how, Hwang does not include “deleting ... eliminating, and ... recreating” of the claim.

The Examiner counts two steps of selecting sentences and extracting the selected sentences for inclusion in the summary for Hwang. Then, the Examiner concludes that “Hwang’s method of extracting selected text from the document ... is equivalent to deleting the selected text from the document ... as cited in independent claim 1.” The Examiner finds support for his arguments in page 8, lines 11-14 of the specification and block 105 of figure 1 of the Application.

Block 104 states “select sentence, k, with highest relevance score; include k in summary.” (Application, Figure 1.) Then, block 105 continues “Delete k from S [candidate sentence set]; eliminate terms in k from document. Recreate D [weighted term frequency vector] for the document.” (Id.) Inclusion in the summary and deletion are in two different blocks: 104 and 105. These blocks of Figure 1 of the Application clearly set forth that the sentence is selected, included in the summary, and then deleted from the document. The cited paragraph of the Application, page 8, lines 11-14, explains the deletion and elimination in block 105 of Figure 1. This deletion and elimination have a purpose that is explained in the specification and is set apart from inclusion in the summary. Inclusion of the selected sentence in the summary is discussed elsewhere, for example, on page 8, lines 1-6 of the specification. As such, the cited passages of the specification support distinguishing “deletion” and “elimination” of claim 1 from “extraction” of Hwang.

Accordingly, claim 1 is believed to be patentable in view of Hwang and Foltz. Claims 9 and 13 are patentable over Hwang and Foltz for similar reasons.

#### Claim 21

Claim 21 recites “A method of creating a generic text summary of a document; said method comprising: obtaining the document; constructing a terms-by-sentences matrix for said document; performing singular value decomposition on said terms-by-sentences matrix to obtain a singular value matrix and a right singular vector matrix, wherein each sentence in said document is represented by a column vector of a transpose of said right singular vector matrix; ranking each right singular vector in said right singular vector matrix; selecting a sentence for inclusion in said generic text summary in accordance with said ranking; and generating the generic text summary based on the selected sentence.” (Emphasis added.)

First, Foltz does not teach the “terms-by-sentences matrix” of claim 21. Claim 21 uses SVD after “constructing a terms-by-sentences matrix for said document” by “performing singular value decomposition on said terms-by-sentences matrix.” This is different from Foltz that is not interested in individual sentences, operates on entire documents, and finds the frequency of terms within the documents. The cited portions of Foltz discuss “term-by-document [matrix] of Table 2” and “term matrix” in Table 3 and a “document matrix” in Table 4; but not a “terms-by-sentences matrix,” as claimed in claim 21.

Second, because Foltz is not concerned with sentences of a document, it does not teach or suggest “selecting a sentence for inclusion in said generic text summary in accordance with said ranking” of claim 21. (Emphasis added.)

In short, Foltz is directed to one application of SVD and claims of the instant Application are directed to a different application of SVD. Hwang is merely cited because it pertains to document summarization and does not cure the deficiency of Foltz.

Accordingly, claim 21 is believed to be patentable in view of Hwang and Foltz. Claims 26 and 29 are patentable over Hwang and Foltz for similar reasons.

Boguraev and Cohen

Boguraev is cited for alleged teaching the “weighting functions” used in some of the dependent claims. Cohen is cited for alleged teaching of the normalizing of the vectors. The cited portions of these references do not appear to cure the deficiencies of Hwang and Foltz. Claims 1, 9, 13, 21, 26 and 29, therefore, remain patentable over all cited references.

Dependent Claims

Dependent claims 2-8, 10-12, 14-20, 22-25, 27 and 28 and claims 30-32 are believed to be patentable at least for dependence from their respective patentable base claims.

Respectfully submitted, ,



Fariba Sirjani  
Registration No. 47,947

SUGHRUE MION, PLLC  
Telephone: (650) 625-8100  
Facsimile: (650) 625-8110

WASHINGTON DC OFFICE

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